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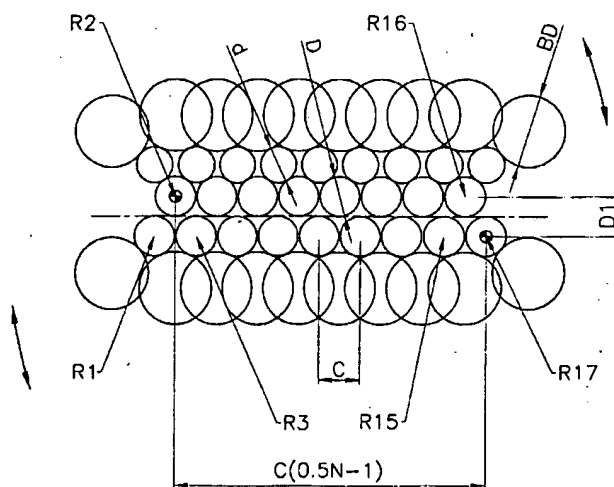
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- Published:  
— without international search report and to be republished upon receipt of that report

[Continued on next page]

(54) Title: **LEVELLING MACHINE AND METHOD**



(57) Abstract: A levelling machine for working the coiling tendencies out of sheet metal and the like, comprising an upper set of work rolls with sets of backup rollers rotationally mounted within upper backup carriers pivotable about a first axis and a lower set of work rolls with sets of backup rollers each in a lower backup carrier pivotable about a second axis, where the first and second axes are substantially parallel and fixed relative to each other in use. A method for controlling such a levelling machine and an apparatus and method for removing cassettes from the main frame of a levelling machine.

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/GB2005/000556

| <b>A. CLASSIFICATION OF SUBJECT MATTER</b><br>IPC 7 B21D1/02  |  |  |
|---|--|--|
| According to International Patent Classification (IPC) or to both national classification and IPC   |  |  |
| <b>B. FIELDS SEARCHED</b><br>Minimum documentation searched (classification system followed by classification symbols)<br>IPC 7 B21D  |  |  |
| Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched   |  |  |
| Electronic data base consulted during the international search (name of data base and, where practical, search terms used)<br>EPO-Internal, WPI Data, PAJ   |  |  |
| <b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>   |  |  |
| Category *  | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No.  |
| X   | GB 1 119 982 A (HEAD, WRIGHTSON AND COMPANY, LIMITED)<br>17 July 1968 (1968-07-17)<br>page 3, lines 3-8; claims 3,6,7; figures | 1,4,7,8  |
| A   | EP 0 260 361 A (THE MONARCH MACHINE TOOL COMPANY) 23 March 1988 (1988-03-23)<br>the whole document                             | 1,3,4,6,8  |
| <input type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex.  |  |  |
| * Special categories of cited documents :<br>"A" document defining the general state of the art which is not considered to be of particular relevance<br>"E" earlier document but published on or after the international filing date<br>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)<br>"O" document referring to an oral disclosure, use, exhibition or other means<br>"P" document published prior to the international filing date but later than the priority date claimed<br>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention<br>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone<br>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.<br>"&" document member of the same patent family |  |  |
| Date of the actual completion of the international search<br><br>25 July 2005   |  | Date of mailing of the international search report<br><br>25. 10. 2005 |
| Name and mailing address of the ISA<br>European Patent Office, P.B. 5818 Patentlaan 2<br>NL - 2280 HV Rijswijk<br>Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,<br>Fax: (+31-70) 340-3016  |  | Authorized officer<br><br>Ris, M                                       |

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/GB2005/000556

## Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1 - 12, 25, 26

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-12,25,26

pivotably mounted carriers to which the back-up rollers are mounted  
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2. claims: 13-24,27

control of load  
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3. claims: 28-36

removal of cassette from a levelling machine  
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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB2005/000556

| Patent document<br>cited in search report |   | Publication<br>date | Patent family<br>member(s) | Publication<br>date |
|---|---|---------------------|----------------------------|---------------------|
| GB 1119982                                | A | 17-07-1968          | NONE                       |                     |
| EP 0260361                                | A | 23-03-1988          | DE 3684919 D1              | 21-05-1992          |